

D. Systolic murmur in pulmonic stenosis spilling through the aortic second sound, pulmonic valve closure being delayed. **E.** Aortic or pulmonary diastolic murmur. **F.** Long diastolic murmur of mitral stenosis after the opening snap (OS). **G.** Short mid-diastolic inflow murmur after a third heart sound. **H.** Continuous murmur of patent ductus arteriosus. (*Courtesy of Antony and Julie Wood.*)

Duration and Character The duration of a heart murmur depends on the length of time over which a pressure difference exists between two cardiac chambers, the left ventricle and the aorta, the right ventricle and the pulmonary artery, or the great vessels. The magnitude and variability of this pressure difference, coupled with the geometry and compliance of the involved chambers or vessels, dictate the velocity of flow; the degree of turbulence; and the resulting frequency, configuration, and intensity of the murmur. The diastolic murmur of chronic aortic regurgitation (AR) is a blowing, high-frequency event, whereas the murmur of mitral stenosis (MS), indicative of the left atrial–left ventricular diastolic pressure gradient, is a low-frequency event, heard as a rumbling sound with the bell of the stethoscope. The frequency components of a heart murmur may vary at different sites of auscultation. The coarse systolic murmur of aortic stenosis (AS) may sound higher pitched and more acoustically pure at the apex, a phenomenon eponymously referred to as the *Gallavardin effect*. Some murmurs may have a distinct or unusual quality, such as the “honking” sound appreciated in some patients with mitral regurgitation (MR) due to mitral valve prolapse (MVP).

The configuration of a heart murmur may be described as crescendo, decrescendo, crescendo-decrescendo, or plateau. The decrescendo configuration of the murmur of chronic AR (**Fig. 42-1E**) can be understood in terms of the progressive decline in the diastolic pressure gradient between the aorta and the left ventricle. The crescendo-decrescendo configuration of the murmur of AS reflects the changes in the systolic pressure gradient between the left ventricle and the aorta as ejection occurs, whereas the plateau configuration of the murmur of chronic MR (**Fig. 42-1B**) is consistent with the large and nearly constant pressure difference between the left ventricle and the left atrium.